

LISTING OF CLAIMS

A detailed listing of claims is presented below. Please amend currently amended claims as indicated below including substituting clean versions for pending claims with the same number. In addition, clean text versions of pending claims not being currently amended that are under examination are also presented. It is understood that any claim presented in a clean version below has not been changed relative to the immediate prior version.

1. (Currently amended) A differential load driving circuit comprising:

a plurality of power switches selectively coupled to a load to supply current to said load;

a plurality of power switch driving circuits operable to control the conduction state of said power switches and to selectively couple at least one of said plurality of power switches to a PWM signal; ~~and~~

at least one current source; and

at least one current source switch operable to couple said at least one current source to said load;

wherein said current source is coupled to said load to deliver current to said load during low current conditions at said load, and said PWM signal coupled to said load to deliver current to said load during high current conditions at said load.

2. (Original) A differential load driving circuit as claimed in claim 1, said plurality of power switches forming an H-Bridge differential load driving circuit.

3. (Original) A differential load driving circuit as claimed in claim 1, further comprising two current sources, wherein one said current source being coupled to said load during a first low current time period and the other said current source being coupled to said load during a second low current time period.

4. (Currently amended) An H-Bridge load driving circuit, comprising:

four power switches forming an H-Bridge circuit selectively coupled to a load to supply current to said load;

a plurality of power switch driving circuits operable to control the conduction state of said power switches and to selectively couple at least two of said plurality of power switches to a PWM signal; ~~and~~

at least one current source; and

at least one current source switch operable to couple said at least one current source to said load;

wherein said H-Bridge circuit having a first mode in which said current source is coupled to said load to supply current to said load and a second mode in which at least two of said power switches are coupled to said PWM signal to supply current to said load.

5. (Original) An H-Bridge load driving circuit as claimed in claim 4, said first mode is a low current mode and said current source supplies a linear current to said load.

6. (Original) An H-Bridge load driving circuit as claimed in claim 4, said second mode is a high current mode.

7. (Currently amended) An H-Bridge load driving circuit, comprising

four power switches forming an H-Bridge circuit selectively coupled to a load to supply current to said load; ~~and~~

at least one current source; and

at least one current source switch operable to couple said at least one current source to said load;

wherein said H-Bridge circuit is adapted to operate in a linear mode using said at least one current source switch to enable said current source and a PWM mode wherein said switches are controlled with a PWM signal.

8. (Original) An H-Bridge load driving circuit as claimed in claim 7, further comprising a plurality of power switch driving circuits operable to control the conduction state of said power switches and to selectively couple at least two of said plurality of power switches to a PWM signal.

9. (Original) An H-Bridge load driving circuit as claimed in claim 7, further comprising at least one filter circuit coupled between at least two of said four power switches and said load.

10. (Original) An H-Bridge load driving circuit as claimed in claim 7, said load comprises a thermal electrical cooler.

11. (Currently amended) A differential driving circuit for driving a thermal electric cooler, said circuit comprising:

a plurality of power switches selectively coupled to a thermal electric cooler load to supply current to said load;

a plurality of power switch driving circuits operable to control the conduction state of said power switches and to selectively couple at least one of said plurality of power switches to a PWM signal; ~~and~~

at least one current source; and

at least one current source switch operable to couple said at least one current source to said load;

wherein said differential driving circuit having a first mode in which said at least one current source switch is enabled to couple said current source ~~is coupled~~ to said load to supply current to said load and a second mode in which at least two of said power switches are coupled to said PWM signal to supply current to said load.

12. (Original) A differential driving circuit as claimed in claim 11, said plurality of power switches forming an H-Bridge differential load driving circuit.

13. (Original) A differential driving circuit as claimed in claim 11, said first mode comprising a low current mode in which the direction of current through the load defines a cooling mode.

14. (Original) A differential driving circuit as claimed in claim 11, said first mode comprising a low current mode in which the direction of current through the load defines a heating mode.

15. (Currently amended) A differential driving circuit as claimed in claim 11, said first second mode comprising a high current mode in which the direction of current through the load defines a cooling mode.

16. (Original) A differential driving circuit as claimed in claim 11, said second mode comprising a high current mode in which the direction of current through the load defines a heating mode.